

I. CLAIMS LISTING

CLAIMS

1. (Previously presented) A non-human transgenic mammal comprising a transgene comprising a nucleotide sequence encoding a fatty acid desaturase, wherein said fatty acid desaturase-encoding nucleotide sequence is operably linked to a mammary gland-specific promoter, wherein the transgene is expressed in a mammary gland epithelial cell of said mammal, and wherein said mammal produces milk comprising a level of monounsaturated fatty acids (MUFA) that is at least 5% higher than the level of MUFA in milk produced by a non-transgenic mammal of the same species.
2. (Canceled)
3. (Previously presented) The transgenic non-human mammal according to Claim 1, wherein said mammal is an ungulate.
4. (Canceled)
5. (Previously presented) The transgenic non-human mammal according to Claim 1, wherein said transgene is chromosomally integrated.
6. (Previously presented) The transgenic non-human mammal according to Claim 1, wherein said fatty acid desaturase is a stearoyl-CoA desaturase.
- 7.-12. (Canceled)

13. (Previously presented) A method for producing a non-human transgenic mammal of claim 1, said method comprising:

(a) introducing a fatty acid desaturase transgene into a single-celled embryo, forming a genetically modified embryo, wherein said transgene comprises a nucleotide sequence encoding a fatty acid desaturase and wherein said fatty acid desaturase-encoding nucleotide sequence is operably linked to a mammary gland-specific promoter; and

(b) transferring the genetically modified embryo into a recipient female of the same species as the embryo, wherein the genetically modified embryo develops into a transgenic mammal in the female.

14. (Previously presented) The method according to Claim 13, wherein said transgenic mammal is chosen from a mouse, a rat, a rabbit, a pig, a sheep, a goat, and a cow.

15. (Previously presented) The method according to Claim 13, wherein said transgene is expressed in mammary gland cells of said mammal.

16. (Canceled)

17. (Original) The method according to Claim 13, wherein the desaturase transgene is a stearoyl-CoA desaturase transgene.

18. (Previously presented) A method for producing a non-human transgenic mammal according to claim 1, said method comprising:

a) introducing a fatty acid desaturase transgene into a mammalian somatic cell, forming a genetically modified somatic cell comprising a genetically modified nucleus;

b) transferring the genetically modified nucleus from the genetically modified somatic cell into a single-celled embryo, generating a genetically modified single-celled embryo; and

c) transferring the genetically modified single-celled embryo into a recipient female of the same species as the embryo, wherein the genetically modified embryo develops into a transgenic mammal in the female.

19. (Original) The method of claim 18, wherein the desaturase transgene is a stearyl CoA desaturase transgene.

20. (Previously presented) A method of producing a food product, said method comprising harvesting a food product from a non-human transgenic mammal of Claim 1, wherein said food product is milk.

21. (Previously presented) A method of producing a food product, the method comprising processing a food product harvested from a non-human transgenic mammal of Claim 1, wherein said food product is milk.

22.-32. (Canceled)

33. (Previously presented) The transgenic mammal of claim 1, wherein said mammal is a female that produces milk comprising a level of polyunsaturated fatty acids (PUFA) that is at least 5% higher than the level of PUFA in milk produced by a non-transgenic mammal of the same species.

34. (Canceled)

35. (Previously presented) The transgenic mammal of claim 1, wherein said mammal is a female that produces milk comprising a level of saturated fatty acids (SFA) that is at least 5% lower than the level of SFA in milk produced by a non-transgenic mammal of the same species.

36. (Previously presented) The transgenic mammal of claim 1, wherein said mammal is chosen from a goat, a cow, and a sheep.

37. (Canceled)

38. (Previously presented) The transgenic mammal of claim 1, wherein said mammal is a female that produces milk comprising a level of conjugated linoleic acid (CLA) that is at

least 5% higher than the level of CLA in milk produced by a non-transgenic mammal of the same species.

39. (Previously presented) The transgenic mammal of claim 1, wherein the mammary gland-specific promoter is a β -lactoglobulin promoter.

40. (Previously presented) The transgenic mammal of claim 1, wherein the mammary gland-specific promoter is a β -casein promoter.

41. (Previously presented) The transgenic mammal of claim 1, wherein the mammary gland-specific promoter is an α S1-casein promoter.

42. (Previously presented) The transgenic mammal of claim 1, wherein the mammary gland-specific promoter is an α S2-casein promoter.

43. (Previously presented) The transgenic mammal of claim 1, wherein the mammary gland-specific promoter is a whey acid protein promoter.